

Claims

1. Method for automatic network dialing using an Internet or analogue type protocol this network comprising a plurality of interconnected routers (R0 to R6) initially bearing local link type addresses on each of their interfaces, said method making a master router (R0) and a dialer (E) intervene that can be inserted either into a server or into a network router using a process of self-configuration of said protocol which allows equipment to automatically configure itself according to the information it receives from the router(s) connected to the same link, by means of Router Advertisement type messages, characterised in that, in order to use the routing functions of said protocol it consists in inserting a mechanism for allotting prefixes to the Ipv6 addresses of the network routers so as to be able to use the process of self-configuration of said protocol thanks to a mechanism making a dialer (E) intervene which delivers said dialing prefixes according to an operating sequence comprising the following stages for each of the routers:
 - an initialisation stage in which the router has not as yet received a prefix issuing from the dialer and is therefore incapable of connecting to the dialer, this stage terminating when the router receives a Router Advertisement message, sent according to the self-configuration protocol by another router and which comprises the list of prefixes it uses.
 - a configuration stage actuated through the reception of the Router Advertisement message during which, thanks to the information contained in the Router Advertisement message, it self-configures a routing address on the interface through which the message came,
 - a relay stage in which the router has already received prefixes and is capable of connecting to the dialer, the router thus intermediates between the dialer and other routers which are still in the configuration stage.

2. Method according to claim 1,

characterised in that during the commissioning of the initialisation stage, the router searches in its backed-up information if the configuration has already been performed (block B₂), and

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- if the configuration has already been performed, the router advances to the relay stage,

- if the configuration has still not been performed:
 - if the router is master, then the router immediately advances to the configuration stage (block B₅),
 - if the router is not master, it remains alert on each of its interfaces (block B₆),
 - when it receives a Router Advertisement message for one of its interfaces:
 - It records the address of the transmitting router as Upstream Router,
 - It records the interface through which the message came as primary interface,
 - It self-configures a routing address on the interface and records it as primary address (block B₇),
 - It advances to the configuration stage.

3. Method according to any one of previous claims,

25 characterised in that in the configuration stage, the router performs the following operations:

- it attempts to connect to the dialer (E) by querying as many prefixes from it as there are links to dial:

- if the router is master, it sends its query directly to the dialer (E), this configuration query containing the ordered list of primary addresses of the relays crossed, so that the dialer (E) can respond to this query,
- if the router is not master, it sends its configuration query towards the upstream router via the primary interface, the query comprising the primary address,

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- upon receiving a reply from the dialer (E):
 - it records the dialer address.

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- if the router is master:
 - it records the interface through which the reply came as primary interface,
 - it self-configures a routing address on the interface and records it as primary address,

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- it self-configures a routing address for every interface to be configured and records them,
- it starts to periodically diffuse the router advertisement messages on each interface,
- it advances to the relay stage.

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4. Method according to any one of previous claims,
 characterised in that in the relay stage, the router performs the following operations:

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- it receives the configuration queries issuing from other routers:
 - it inserts its primary address in the query, these addresses being successively inserted in an orderly manner by each relay,
 - it sends the new query either to its upstream router or directly to the dialer if the latter is accessible by the aforesaid protocol (Ipv6 (which is always the case for the master)),

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- it receives the configuration replies either from other routers or from the dialer:
 - in the reply, the router searches for its own primary address,
 - it selects the next address in the list,
 - it sends the reply to this address.

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